

REMARKS

Status of the Claims

Claims 1-21 are pending in the present application. Claims 18, 19, and 21 have been amended to more clearly define the invention.

Telephone Conference with the Examiner

On February 4, 2004, applicants' attorney conducted a telephone interview with Examiner Duran, during which, the art cited by the Examiner in rejecting the claims in this application was discussed. In particular, the organization of content into play lists was discussed. Applicants' attorney pointed out how Brown teaches that content (generally ads for placement on web pages) is organized into priority queues even before any request for content is received, whereas the present invention organizes content (the ads) after a determination is made as to how many open slot are available (for example, after a request for content is received). .

While Brown's method enables play lists to be generated using minimal computational resources *after* the inventory of open slots is determined, the present invention is particularly well suited to enabling content to be distributed to a specific inventory of open slots (since the content is not organized until after the inventory of open slots is determined). While the present invention would require more computation to be performed after an inventory of empty slots is identified (i.e., after a play list is requested), this technique enables applicants' claimed invention to ensure that for any given inventory of slots, paying advertisers receive preferences over non paying advertisers, without simply ignoring the non paying advertisers, which is important to applicants' business model.

The Examiner appeared to recognize this distinction of organizing content before as compared to after an inventory of empty slots has been identified, and suggested that because Herz discloses providing a user with ranked lists in response to a request (indicating organization *after* a request, not *before* a request), it would be obvious to combine Brown and Herz so that a play list created from Brown's priority queues would be further organized according to Herz's rankings. Applicants' attorney noted that such a combination would require consuming computational resources both *before* and *after* the available inventory of slots was identified, which would result in a less efficient use of computational resources than achievable using Brown's method without the modification taught by Herz, or applicants' method, so that one of ordinary skill would not be led to make such a modification of Brown. The Examiner noted that such inefficiency was a good point teach away

1 from the combination proposed, and agreed to consider that argument if submitted in a written
2 response to the outstanding Office Action.

3 Background Discussion of Empty Item Slots, Priority Queues, and Play Lists

4 It is important to recognize that Brown's priority queues are NOT equivalent to items slots.
5 While the distinction is rather subtle, that distinction goes to a critical difference between Brown and
6 the present invention as defined in applicants' claims. In accord with applicants' claimed invention,
7 the number of item slots that are empty and thus available in an inventory is determined *before* the
8 item slots so identified are organized into groups and filled with content. Independent Claims 1, 8,
9 13, and 20 already specifically recite this aspect of the applicants' invention, and independent
10 Claims 18, 19, and 21 have been amended to make it completely clear that the item slots provided
11 specifically corresponds to the number of empty item slots available in an inventory. Since this
12 aspect of applicants' invention is already recited in other claims prior to this amendment, the
13 amendment of Claims 18, 19, and 21 to make this aspect of the invention clear cannot be considered
14 to introduce a new issue that would require further searching by the Examiner. The present
15 amendment should thus be entered without requiring applicants to file an RCE at this time.

16 While the priority queues disclosed by Brown clearly include "slots" that are filled with
17 content according to rules determined by an analyst, it is important to recognize that the number of
18 "slots" in the priority queues disclosed by Brown have no relation to the actual number of empty slots
19 in an inventory. The "slots" in a priority queue are not equivalent to item slots in applicants' slot
20 groups and meta slot groups, because there is simply no correspondence between the number of open
21 slots in an inventory and a number of "slots" in one of Brown's priority queues. In a large network,
22 there may be a specific number of different empty slots that can be filled with ads. In applicants'
23 invention, the total number of slots in the item slot groups and meta item slot groups for such a large
24 network *must be made* exactly equal to that specific number of slots available. (See applicants'
25 specification at pg 12, lines 2-10, and pg 16, lines 10-18.) Brown simply does not teach or suggest
26 that the aggregate number of slots in all priority queues must be made exactly equal to the number of
27 empty slots in the network. Nor does there appear to be any logical reason for modifying Brown to
28 achieve such a correspondence, particularly because Brown teaches that you want to have many
29 different priority queues, so as to achieve one or more priority queues for each individual subscriber,
30 each individual time period, and each individual location where content segments are stored, and

1 further teaches that different queues will be produced using different sets of rules. Brown clearly
2 describes that priority queues are developed by taking the content available (ads) and processing that
3 content according to rules defined by an analyst to generate a priority queue. Note that limiting the
4 aggregate number of "slots" in priority queues, as provided by applicants' claims, appears to
5 contradict Brown's teaching that it is desirable to generate many priority queues using different sets
6 of rules.

7 As disclosed by Brown, when a request for content is received, the appropriate priority queue
8 is consulted and a *play list* is constructed. It is thus the *play list* that includes a number of item slots
9 that directly corresponds to the number of empty slots in an inventory. A request for 100 ads means
10 there are 100 empty slots to be filled (i.e., an inventory of 100 empty item slots), and a play list of
11 100 slots is constructed and filled using the priority queues. Clearly, the play lists disclosed by
12 Brown are the structures that have a one-to-one correspondence with an available inventory of empty
13 slots, not the priority queues, but Brown's play lists are clearly not processed as recited by applicants'
14 claims.

15 As discussed in the telephone interview noted above, Brown teaches that computational
16 resources are expended to organize content into various priority queues *before* the size of the
17 inventory is determined. In contrast, applicants' invention utilizes computational resources to
18 organize the content *after* the size of the inventory is determined. Brown's method enables play lists
19 to be generated quickly, simply by accessing predetermined priority queues, using minimal amounts
20 of computational overhead. Applicants' method requires more computational resources to be
21 employed, once the actual inventory of empty slots is known, but works particularly well with
22 applicants' business model.

23 Rejection of Claims 8, 13, and 18-21 under 35 U.S.C. § 103

24 The Examiner has rejected Claims 8, 13, and 18-21 under 35 U.S.C. § 103(a) as being
25 unpatentable over Brown et al. (U.S. Patent No. 6,026,368), in view of Herz (U.S. Patent
26 No. 6,029,195). The Examiner indicates that Brown discloses an invention equivalent to that defined
27 by applicants' claims, except for filling slots based on hierarchical clustering in which an item in a
28 lower cluster is also a member of each cluster above, and each cluster below is defined more
29 specifically, which is disclosed by Herz. Applicants respectfully disagree for the following reasons.
30

1 There are two compelling reasons why the suggested combination of Brown and Herz does
2 not achieve an invention equivalent to that defined by applicants' claims. First, such a combination is
3 inefficient (and thus, there would be no motivation for making the combination); and second, the
4 suggested combination of Herz and Brown is not equivalent to applicants' claimed invention.

5 As described above, Brown's priority queues require that computational resources be utilized
6 *before* the inventory of empty slots is identified (i.e., before a request for a play list is received). If
7 the play list generated using Brown's method is further sorted using Herz' method, then additional
8 computational resources would be required *after* a request for content is received and the play list is
9 generated. This modification of Brown is clearly a less efficient use of computational resources than
10 exhibited by Brown's method without the modification proposed by the Examiner (since Brown
11 teaches that resources are consumed *before* inventory is defined), or applicants' method (which
12 provides that resources are consumed *after* inventory is defined). One of ordinary skill in the art
13 would not be motivated to combine references to achieve a less efficient method unless some benefit
14 is achieved that outweighs the inefficiency. There does not appear to be any benefit achieved in
15 combining Brown and Herz. The play list produced by Brown includes content that is already
16 organized based on the content of the priority queues. Brown specifically teaches that many different
17 priority queues can be generated, thereby producing different play lists organized per the rules
18 developed by the analyst generating the priority queues. There does not appear to be any benefit to
19 be gained by further organizing the play list according to hierarchical rules, because if a hierarchical
20 result was desired, a priority queue based on hierarchical rankings could readily have been defined
21 (resulting in a similarly hierarchical play list). Thus, there appears to be no logical basis for
22 combining the references as suggested by the Examiner. Significantly, Brown does not teach or
23 suggest that the play list once generated requires any further organization, or that any benefit could be
24 had by further organizing a play list that is not random, but has already been organized based on
25 priority queues.

26 The second reason for traversing this rejection is that the combination suggested by the
27 Examiner is simply not equivalent to applicants' claimed invention. It is important to recognize that
28 the hierarchical organization disclosed by Herz is not identical to the organization of the empty slots
29 defined by applicants. As indicated in applicants' previous response, according to Herz, each item in
30 a list is sorted, and one sort that can be used is hierarchical, such that each lower cluster (or sub

1 cluster) is more narrowly defined, and *each item in the same cluster* is defined with specificity for
2 that cluster. Applicants have previously graphically illustrated that this result is not true when empty
3 slots are filled using applicants' claimed method. According to applicants' claimed method, more
4 narrowly defined slots are filled first. Then, any additional empty slots in that group are filled with
5 items that share a broad characteristic, but not the same narrow characteristic. Thus, when
6 applicants' organizational process is completed, the resulting "tree" is not equivalent to the
7 hierarchical tree taught by Herz. According to Herz, each member of a lower cluster is defined with
8 the same specificity, whereas in the present invention, not all members of a narrowly defined item
9 slot group are defined with the same specificity (they share a broad characteristic, but not all share
10 the same narrow characteristic).

11 While applicants previously raised this argument, the Examiner's response was quiet brief,
12 failing to address the merits of the argument, and it is not clear from the Examiner's response that
13 applicants' argument was considered at all. The Examiner has not articulated any logic that would
14 lead one of ordinary skill to modify Herz's method such that not all items in a lower cluster are
15 defined with exactly the same specificity. Applicants' claimed method of filling empty slots is not
16 identical to the sorting described by Herz, and the cited art provides no justification for concluding
17 that the modifications required to Herz' sorting methods to achieve applicants' claimed method of
18 filling slots would have been obvious. If the Examiner disagrees, a clearly articulated reason for the
19 Examiner's position would enable applicants to determine whether the rejection is justified, and if so,
20 to further address the rejection.

21 The combination suggested by the Examiner results in a less efficient process that appears to
22 provide no additional benefit to compensate for the loss in efficiency, and the sorting described by
23 Herz is not identical to the organization defined by applicants. For the reasons discussed above,
24 Claims 8, 13, and 18-21 are distinguishable over the combination of Brown and Herz suggested by
25 the Examiner. Accordingly, the rejection of Claims 8, 13, and 18-21 under 35 U.S.C. § 103 as being
26 unpatentable over Brown in view of Herz should be withdrawn.

27 Rejection of Claims 1-7, 9-12, and 14-17 under 35 U.S.C. § 103

28 The Examiner has rejected Claims 1-7, 9-12, and 14-17 under 35 U.S.C. § 103(a) as being
29 unpatentable over Brown (U.S. Patent No. 6,026,368), in view of Herz (U.S. Patent No. 6,029,195),
30 and further in view of Conley, Jr. et al. (U.S. Patent No. 6,434,745). The Examiner indicates that

1 Brown discloses an invention equivalent to that defined by applicants' claims, except for filling slots
2 based on hierarchical clustering, and displaying a report about the slots as a histogram. Applicants
3 respectfully disagree for the following reasons.

4 As discussed in detail above, applicants specifically recite that before content is organized, the
5 number of empty slots are determined. The step disclosed by Brown that most closely relates to
6 determining an inventory of empty slots is the request that a play list of a specific size (i.e. a request
7 for "X" number of ads) be filled using the predetermined priority queues. According to Brown, the
8 play list is filled based on the priority queues, and no further sorting or organization of the play list is
9 required (i.e. the priority queues control the organization of the play list). Again, a distinction can be
10 made as to expending computational resource *before* the number of empty slots is determined
(Brown), verses *after* the number of empty slots is determined (the present invention). Combining
11 Brown with Herz would requiring expending computational resources *both* before and after the
12 number of empty slots is determined, resulting in a loss of efficiency for no clear benefit. Even if it
13 would have been obvious to generate a histogram as disclosed by Conley, for the reasons noted
14 above, neither Brown, nor a combination of Brown and Herz, are equivalent to the claimed invention.
15 Accordingly, the rejection of Claims 1-7, 9-12 and 14-17 under 35 U.S.C. § 103 as unpatentable over
16 Brown in view of Herz, and further in view of Conley, should be withdrawn.

18 In consideration of the amendments to the claims and the Remarks set forth above, it should
19 be apparent that all of the claims in the present application define a novel and nonobvious invention.
20 Accordingly, this case should be passed to issue with further delay. Should any questions remain, the
21 Examiner is asked to call applicants' attorney at the number indicated below.

22 Respectfully submitted,

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I hereby certify that this correspondence is being deposited with the U.S. Postal Service in a sealed envelope as first class mail with postage thereon fully prepaid addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on February 18, 2004.

Date: February 18, 2004

